WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
ARIZONA

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE
SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF
FEB. 1, 1965

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Soil Conservation Service, 511 N.W. Broadway - Room 507, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan. 15 - Apr. 1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
ARIZONA

(Salt, Verde, Gila and Part of Lower Colorado River Basin)

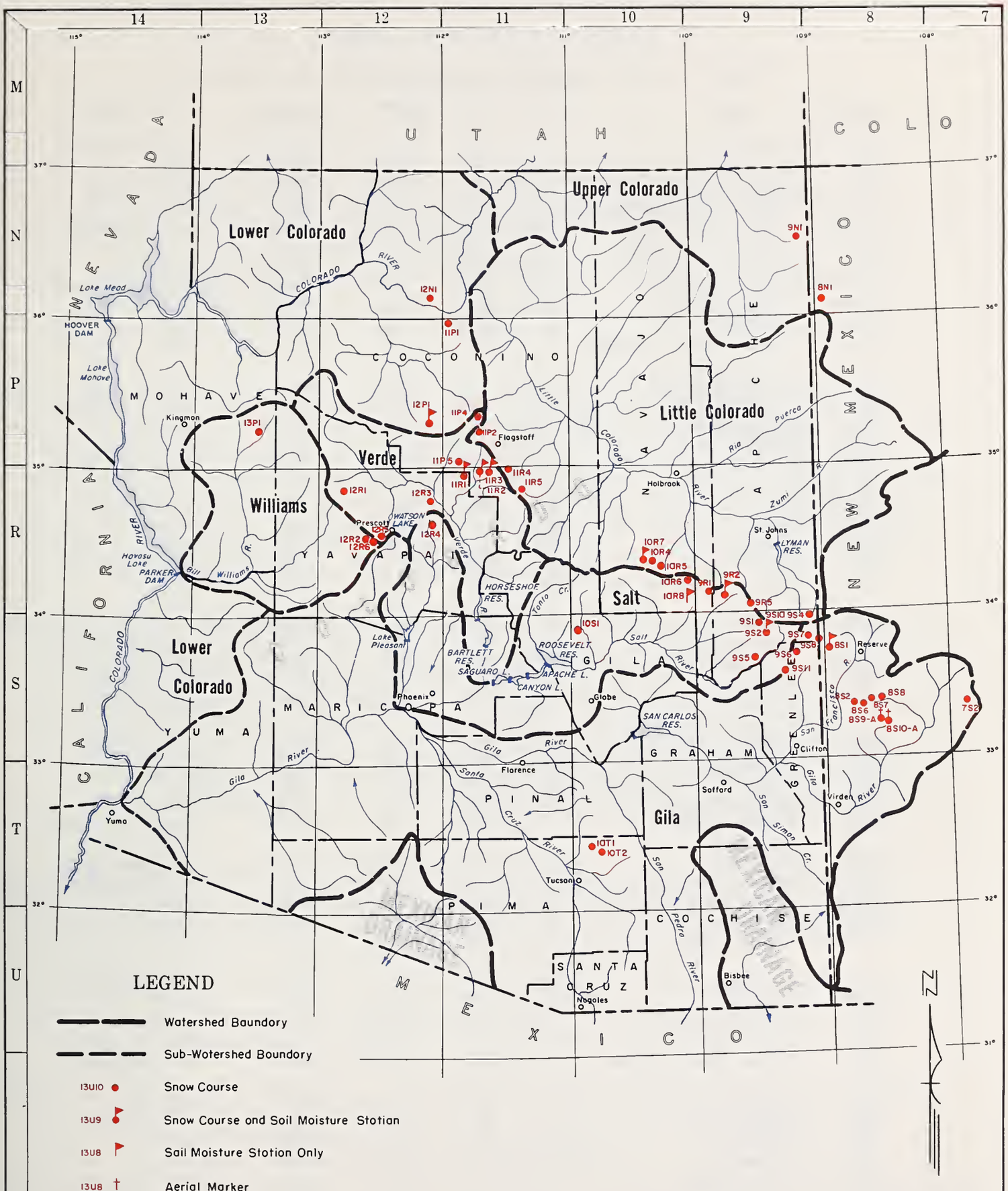
Report prepared by

RICHARD W. ENZ...SNOW SURVEY SUPERVISOR
SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

Issued by

ROBERT V. BOYLE
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

VICTOR I. CORBELL
PRESIDENT
SALT RIVER VALLEY WATER USERS ASSOCIATION



ARIZONA
COOPERATIVE SNOW SURVEYS
Snow Courses and Sub-Watersheds

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA SCS PORTLAND OREG 1954 M-2690

INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

Number**	Name	Sec	Twp	Rge***	Elevation	River Basin
9S1	Baldy (p)	28	7N	27E	9125	Little Colorado
10T1	Bear Wallow	6	12S	16E	8100	Gila
9S6	Beaver Head	13	4N	30E	8000	San Francisco
9S10-*	Black River Divide	10	6N	27E	9400	Salt
12N1	Bright Angel	34	33N	3E	8400	Lower Colorado
12R1	Camp Wood	3	16N	6W	5700	Verde
10R7-M	Canyon Creek #2	18	11N	15E	7500	Little Colorado
11R2-M	Casner Park	19	18N	8E	6930	Verde
12P1-M	Chalender	27	22N	3E	7100	Verde
12R6	Copper Basin Divide(p)	23	13N	3W	6720	Verde
10R8 -*	Corduroy Creek	4	8N	21E	6000	Salt
9S7	Coronado Trail	26	5N	30E	8000	San Francisco
10R6	Forest Dale	2	9N	21E	6430	Salt
11P2	Fort Valley (p)	22	22N	6E	7350	Little Colorado
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado
8S1-M	Frisco Divide	31	6S	20W****	8000	San Francisco
12R4	Gaddes Canyon	11	15N	2E	7600	Verde
10R5	Gentry	36	11N	15E	7650	Salt
11P1	Grand Canyon	21	30N	4E	7500	Lower Colorado
9S11	Hannagan Meadows (p)	19	3N	29E	9090	Salt
11R5	Happy Jack	30	17N	9E	7630	Verde
10R4	Heber (p)	28	11N	15E	7600	Little Colorado
8S9-A	Hummingbird	19	11S	17E	10550	San Francisco
8S6	Ice King	6	11S	18W****	8020	San Francisco
7S2	Inman	6	11S	10W****	7800	Gila
12R2	Iron Springs	22	14N	3W	6200	Bill Williams
9S2	Maverick Fork (p)	13	6N	27E	9150	Salt
9R2-M	McNary	23	8N	23E	7200	Salt
9R1	Milk Ranch	33	8N	23E	7000	Salt
12R3	Mingus Mountain	3	15N	2E	7100	Verde
8S2	Mogollon	2	11S	19W****	7000	San Francisco
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado
11R3-M	Mormon Mountain (p)	14	18N	8E	7500	Verde
11R1-M	Munds Park	7	18N	7E	6500	Verde
11P5-M	Newman Park	25	19N	6E	6750	Verde
9S4	Nutrioso	23	6N	30E	8500	San Francisco
9S5	Pacheta	27	4-1/2N	27E	7800	Salt
8S7	Redstone Trail	5	11S	18W****	8600	San Francisco
10T2	Rose Canyon	15	12S	16E	7300	Gila
8S8	Silver Creek Divide	4	11S	18W****	9000	San Francisco
11P4	Snow Bowl (p)	36	23N	6E	10260	Verde
9S8	State Line	6	6S	21W****	8000	San Francisco
12R5	White Spar	19	13N	2W	6000	Verde
8S10-A	Whitewater	19	11S	17E	10750	Gila
13P1	Willow Ranch	16	21N	11W	5000	Bill Williams
10S1	Workman Creek	33	6N	14E	6900	Salt

* Soil Moisture Station only

** Number indicates location of snow course within coordinate rectangle, thus 9N1 is Course #1 in coordinate rectangle 9N.

*** All in Gila and Salt River Base and Meridian except where otherwise indicated.

**** New Mexico Principal Meridian

M Soil Moisture Station installed on or in vicinity of snow course.

(p) Storage gage installed on or in vicinity of snow course.

A Aerial Snow Depth Gage

ARIZONA WATER SUPPLY OUTLOOK

FEBRUARY 1, 1965

* *

* The Water Supply Outlook for Arizona ranges from fair on the Gila River to good on the Salt, Verde, and Little Colorado Rivers. Very good streamflow was received during January on all streams except the Gila and San Francisco Rivers. Reservoir Storage is above average throughout the State except for San Carlos Reservoir and Lake Pleasant. *

* *

SNOW COVER: Snow cover varies from 46% of average on the Verde Watershed to 110% of average on the Little Colorado. Generally speaking, snow cover is over average above 8000 feet; below average between 7000 and 8000 feet; and virtually non-existent below 7000 feet. Snow Courses in the Mt. Baldy area at 9000' measured 40% above average snow for this date; about 10" of water is present in the snow pack. At 11,000' on the San Francisco Peaks 45" of snow containing 13" of water was measured. No wonder the Arizona Snow Bowl reports excellent skiing conditions!

PRECIPITATION: Starting with this issue, we are reporting data obtained from precipitation storage gages located in the mountain areas. They bear the same name as the snow course unless otherwise indicated. Since November 1, all gages with prior record measured above average precipitation ranging from 111% to 170% of average. Most of the above average precipitation occurred during the heavy storm in early January, which produced between 3" and 5" at most stations. Heaviest precipitation was received along the Rim and in the White Mountains, while the Gila Watershed received only a light storm.

RESERVOIR STORAGE: Slightly above average water is presently in storage in the Salt River Project Reservoirs, as a result of heavy January runoff. Lyman Reservoir, Watson Lake, and Show Lake are well above normal, while San Carlos Reservoir and Lake Pleasant are below average.

Total storage in the Colorado River Reservoirs is just about average for this date, containing 19.7 million acre feet. This is 34% of the total capacity of Havasu Lake, Mohave Lake, Lake Mead, and Lake Powell.

SOIL MOISTURE: Soil moisture is excellent in the mountain areas of Arizona, but in the headwaters of the Gila River in New Mexico it is much dryer. Many stations still report moisture levels above field capacity. Good runoff will result from storms in the near future.

STREAMFLOW AND WATER SUPPLY: Combined flow of the Salt, Verde and Tonto Rivers produced 245,000 Acre Feet during January; this is over twice the discharge normally received. The Gila River on the other hand flowed less than half its usual amount with only 17,590 Acre Feet being gaged at the Head of the Safford Valley.

Streamflow forecasts for the period January through May range from 40% below average on the Gila River, to 40% above average on the Salt River.

Water supplies will be adequate throughout the State with the exception of Upper Gila and San Carlos Project. Supplemental pumping will be necessary there.

STREAM FLOW FORECASTS - FEBRUARY 1, 1965

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

SUB-WATERSHED, STREAM and STATION	SEASONAL STREAM FLOW IN THOUSANDS OF ACRE FEET FORECAST PERIOD: JANUARY - MAY, INCLUSIVE					
	Forecast Runoff 1965	Percent 15-Year Average	Measured Runoff 1964	1963	1962	1948-62 Average
Salt River at Intake	434	136	112.7	206.7	605.7	319.1
Tonto River above Roosevelt	72	141	11.9	10.0	59.9	50.9
Verde River above Horseshoe	219	118	117.5	59.1	250.3	185.8
Gila River near Gila	38	69	19.0	52.8	103.8	55.1
Gila River near Virden	41	60	20.0	67.8	145.2	67.8
Gila River near Solomon	87	64	36.4	125.6	286.6	135.3
Frisco River at Clifton	43	63	17.0	54.6	142.0	68.7
Frisco River near Glenwood	16	60	---	13.9	60.7	26.6
Little Colorado River above Lyman Dam (JAN.-JUNE, Incl.)	11.9	121	6.0	3.1	27.3	9.8

Granite Creek is predicted to flow about 1,700 Acre Feet this Spring, filling Watson Lake to about 80% of capacity by May 1.

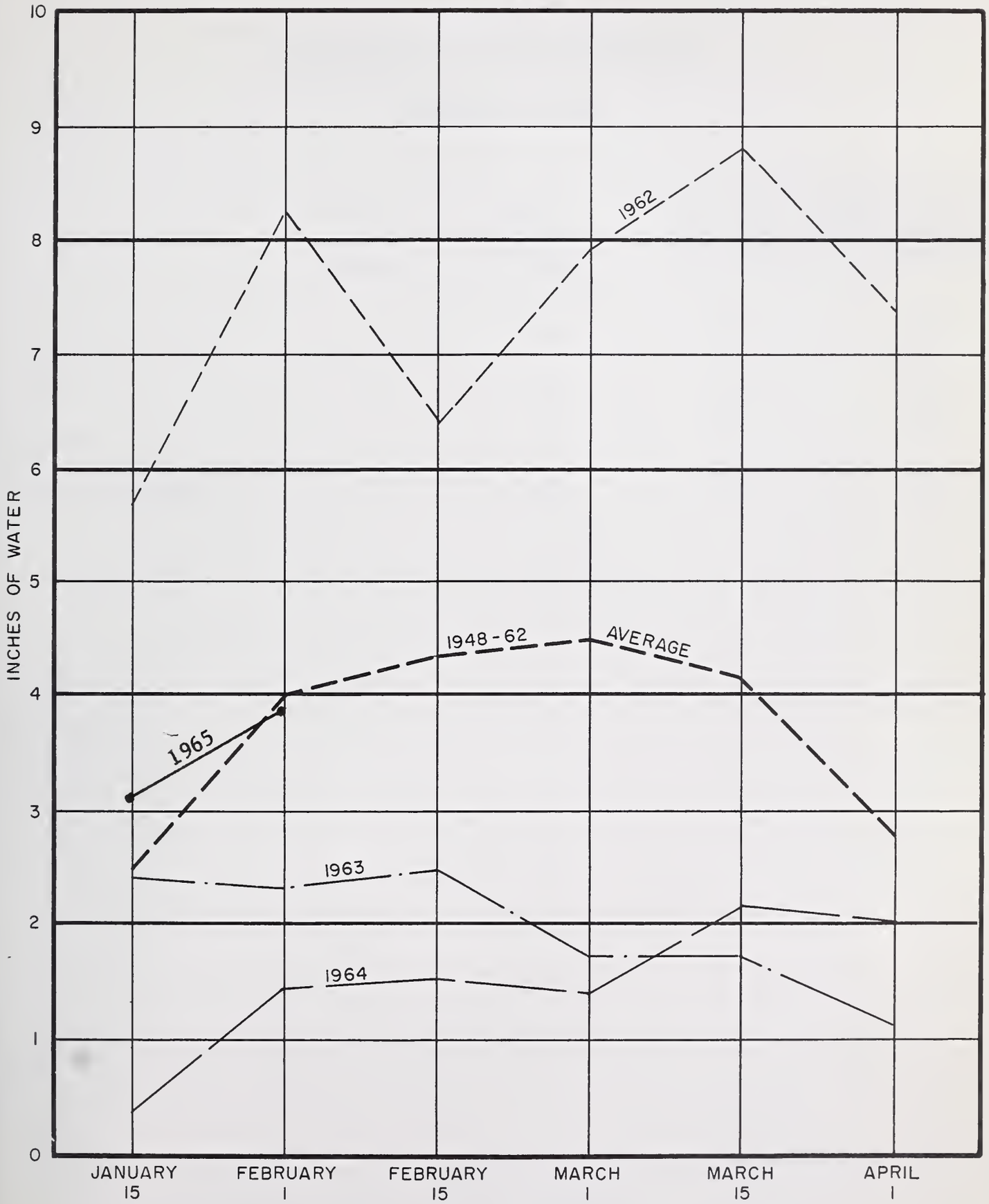
STATUS OF ARIZONA RESERVOIR STORAGE - ABOUT FEBRUARY 1, 1965

SUB-WATERSHED and/or STREAM	RESERVOIR	USABLE CAPACITY 1000s AC. FT.	USABLE STORAGE - 1000s ACRE FEET			
			1965	1964	1963	15-Year Average 1948-62
GILA RIVER SUB-WATERSHED						
Agua Fria	Lake Pleasant	163.8	20.1	16.2	2.7	29.4
Granite	Watson Lake	4.7	2.3	3.9	0.7	---
Gila	San Carlos	1,206.0	56.9	64.9	73.3	65.0
Verde	Bartlett	179.5	84.5	11.1	19.8	66.0
Verde	Horseshoe	142.8	19.3	8.3	1.4	16.6
Salt	Roosevelt	1,382.0	395.8	434.8	654.7	416.1
Salt	Apache	245.0	229.9	238.8	230.3	194.7
Salt	Canyon	58.0	39.2	51.5	51.0	45.1
Salt	Saguaro	70.0	60.6	61.7	49.5	45.9
LOWER COLORADO RIVER SUB-WATERSHED						
Colorado	Lake Havasu	619.4	540.9	549.5	540.9	541.4
Colorado	Lake Mohave	1,810.0	1,680.1	1,696.0	1,682.0	1,522.3*
Colorado	Lake Mead	27,207.0	11,289.0	15,448.0	22,679.0	17,424.7
Little Colo.	Lyman	30.6	9.8	9.9	12.9	6.9
Little Colo.	Show Low Lake	5.1	3.1	0.8	0.7	0.8*
UPPER COLORADO RIVER SUB-WATERSHED						
Colorado	Lake Powell	28,040.0	6,197.3	3,113.0	---	---

* Average is for less than 15 years of record in the 1948-62 period.

RELATIVE SNOW WATER ACCUMULATION
ARIZONA

FEBRUARY 1, 1965



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

SNOW COVER ON ARIZONA WATERSHEDS

FEBRUARY 1, 1965

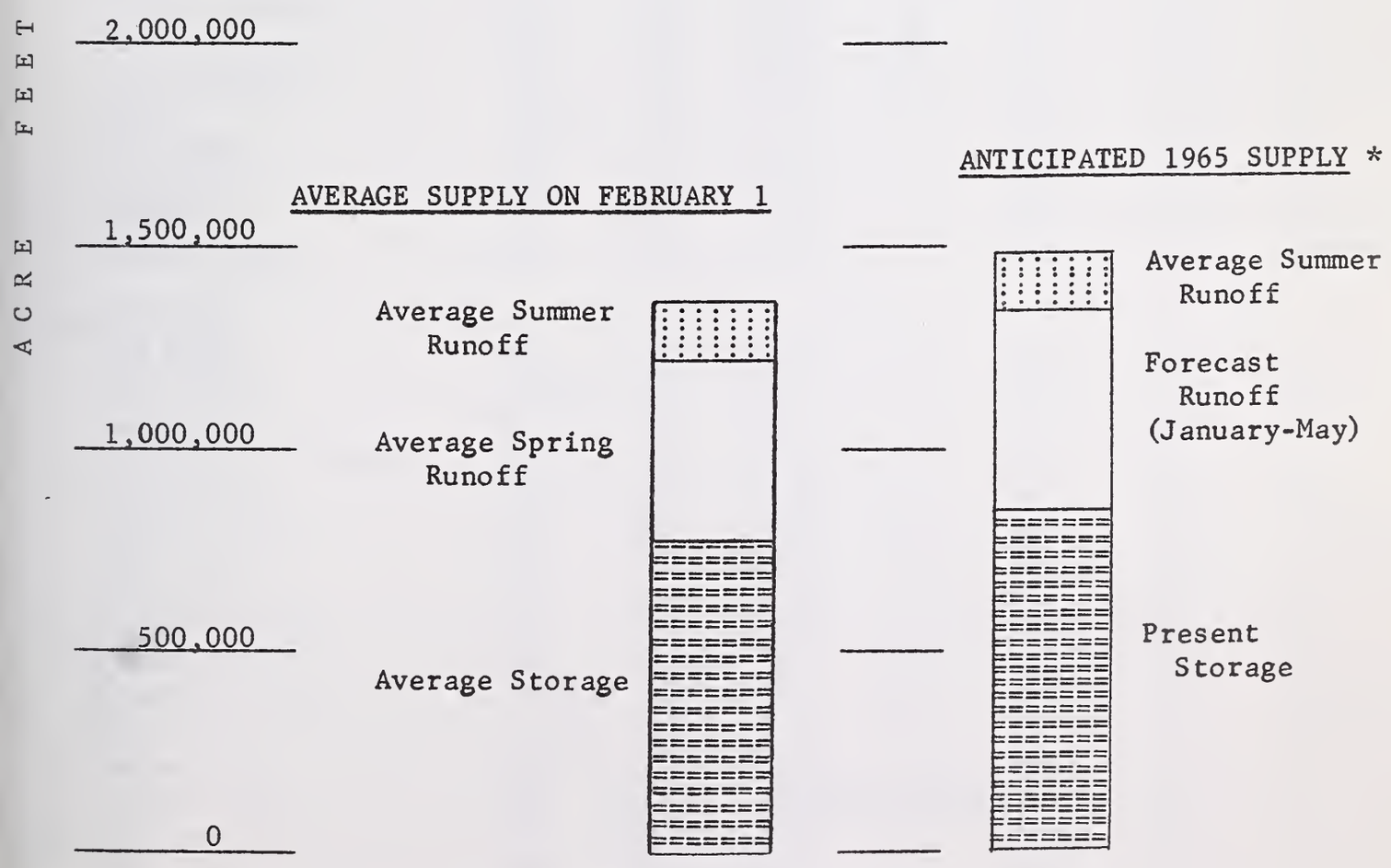
Watershed	No. of Courses Average	Water Content of Snow	This Year's Water Content of Snow Expressed as Percent of:	
			Last Year	Average *
Gila	8	2.5	313	85
Salt	14	3.7	218	98
Verde	11	1.5	167	46
Little Colorado	5	4.4	314	110

* Actual or Estimated 1948-62, 15-year Average

WATER SUPPLY INVENTORY

SALT RIVER VALLEY SYSTEM

FEBRUARY 1, 1965



SNOW ABOUT FEBRUARY 1, 1965

DRAINAGE BASIN and SNOW COURSE			CURRENT INFORMATION			PAST RECORD		
NAME	NO.	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) AVERAGE [a]	
GILA RIVER								
Bear Wallow	10T1	8100	1/29	6	1.2	3.0	3.8	
Beaver Head	9S6	8000	1/28	11	2.4	1.4	3.2	
Coronado Trail	9S7	8000	1/29	12	3.9	0.7	2.6	
Frisco Divide	8S1-M	8000	1/29	8	2.1	0.8	2.3	
1/ Hummingbird #2 (A)	8S9-A	10550	1/29	36	10.1	---	---	
Ice King	8S6	8020	1/30	17	4.8	2.1	---	
Inman	7S2	7800	1/29	0	0.0	0.0	0.5	
Mogollon	8S2	7000	1/30	4	0.8	0.0	1.5	**
Nutrioso	9S4	8500	1/29	7	2.8	0.3	2.1	
Redstone Trail	8S7	8600	1/30	20	5.7	2.4	---	
Rose Canyon	10T2	7300	1/29	3	0.6	1.0	2.3	
Silver Creek Divide	8S8	9000	1/30	28	7.8	3.3	---	
State Line	9S8	8000	1/29	9	2.2	1.0	2.5	
Whitewater (A)	8S10-A	10750	1/29	48	10.6	4.8	---	
SALT RIVER								
Baldy *	9S1	9125	1/29	32	9.7	1.6	6.8	**
Beaver Head	9S6	8000	1/28	11	2.4	1.4	3.2	
Canyon Creek #2	10R7-M	7500	1/28	11	2.9	2.0	3.1	**
Coronado Trail	9S7	8000	1/29	12	3.9	0.7	2.6	
Forest Dale	10R6	6430	1/29	0	0.0	1.5	1.5	
Ft. Apache *	9R5	9160	1/29	33	9.7	2.1	7.2	**
Gentry	10R5	7600	1/28	8	2.3	2.2	3.0	**
Hannagan Meadows	9S11	9090	1/28	32	9.1	2.5	---	
Heber	10R4	7600	1/28	10	3.0	1.9	3.2	**
Maverick Fork	9S2	9050	1/29	38	11.4	1.7	7.9	**
McNary	9R2-M	7200	1/29	0	0.0	1.4	2.4	
Milk Ranch	9R1	7000	1/29	0	0.0	1.3	2.1	
Nutrioso *	9S4	8500	1/29	7	2.8	0.3	2.1	
Pacheta	9S5	7800	1/29	3	1.2	1.8	3.8	**
Workman Creek	10S1	6900	1/28	8	2.8	3.5	4.4	**
VERDE RIVER								
Camp Wood	12R1	5700	1/30	0	0.0	0.0	1.3	
Casner Park	11R2-M	6930	1/27	4	0.7	1.2	4.1	**
Chalender	12P1-M	7100	2/1	5	2.0	1.4	3.2	
Copper Basin Divide	12R6	6720	1/29	T	T	0.0	---	
Fort Valley	11P2	7350	1/29	2	0.5	0.5	2.6	
Gaddes Canyon	12R4	7600	1/29	13	4.4	0.7	4.7	**
Happy Jack	11R5	7630	1/29	8	2.6	1.2	3.7	**
Iron Springs *	12R2	6200	1/29	0	0.0	0.0	1.7	
Mingus Mountain	12R3	7100	1/29	T	T	0.0	1.7	
Mormon Lake *	11R4	7350	1/27	10	2.8	2.0	4.6	
Mormon Mountain	11R3-M	7500	1/27	12	3.5	1.8	6.1	**
Munds Park	11R1-M	6500	1/26	2	0.4	1.0	3.1	**
Newman Park	11P5-M	6750	1/26	2	0.4	1.1	---	
Snow Bowl #1	11P4	10260	Report Delayed			3.4	---	
Snow Bowl #2	11P6	11000	1/31	45	13.0	---	---	
White Spar	12R5	6000	1/29	0	0.0	0.0	---	

(a) 1948-62, 15 year period. (*) Adjacent drainage. (**) 1948-62 Adjusted Average. (A) Aerial observation: Water content estimated.

SNOW ABOUT FEBRUARY 1, 1965

DRAINAGE BASIN and SNOW COURSE NAME	NO.	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	AVERAGE [a]	
BILL WILLIAMS RIVER								
Camp Wood *	12R1	5700	1/30	0	0.0	0.0	1.3	
Copper Basin Divide	12R6	6720	1/29	T	T	0.0	---	
Iron Springs	12R2	6200	1/29	0	0.0	0.0	1.7	
Willow Ranch	13P1	5000	1/30	0	0.0	0.0	0.8	
LOWER COLORADO RIVER								
Bright Angel	12N1	8400	--	--	--	---	7.1	**
Chalender *	12P1-M	7100	2/1	5	2.0	1.4	3.2	
Fort Valley	11P2	7350	1/29	2	0.5	0.5	2.6	
Grand Canyon	11P1	7500	1/29	6	1.2	1.5	2.5	
LITTLE COLORADO RIVER								
Baldy	9S1	9125	1/29	32	9.7	1.6	6.8	**
Canyon Creek #2	10R7-M	7500	1/28	11	2.9	2.0	3.1	**
Forest Dale	10R6	6430	1/29	0	0.0	1.5	1.5	
Ft. Apache	9R5	9160	1/29	33	9.7	2.1	7.2	**
Fort Valley	11P2	7350	1/29	2	0.5	0.5	2.6	
Gentry	10R5	7600	1/28	8	2.3	2.2	3.0	**
Happy Jack *	11R5	7630	1/29	8	2.6	1.2	3.7	**
Heber	10R4	7600	1/28	10	3.0	1.9	3.2	**
McNary	9R2-M	7200	1/29	0	0.0	1.4	2.4	
Mormon Lake	11R4	7350	1/27	10	2.8	2.0	4.6	
Mormon Mountain	11R3-M	7500	1/27	12	3.5	1.8	6.1	**
Nutrioso	9S4	8500	1/29	7	2.8	0.3	2.1	
Snow Bowl #1	11P4	10260	Report Delayed			3.4	---	
Snow Bowl #2	11P6	11000	1/31	45	13.0	---	---	

CORRECTIONS FOR LAST BULLETIN (JANUARY 15, 1965):

GILA RIVER							
Hummingbird #2 (A)	8S9-A	10550	1/14	24	6.5	---	---

1/ The #2 should follow Hummingbird Snow Course.
Original Hummingbird Snow Course has been discontinued.

VERDE RIVER							
Snow Bowl #1	11P4	10260	--	No Survey	--	0.0	---
Snow Bowl #2	11P6	11000	1/14	46	10.0	---	---
LITTLE COLORADO RIVER							
Snow Bowl #1	11P4	10260	--	No Survey	--	0.0	---
Snow Bowl #2	11P6	11000	1/14	46	10.0	---	---

(a) 1948-62, 15 year period. (*) Adjacent drainage. (**) 1948-62 Adjusted Average. (A) Aerial observation: Water content estimated.

PRECIPITATION

STORAGE GAGE DATA - ABOUT FEBRUARY 1, 1965

Drainage Basin and Storage Gage	Elev.	Current Data: Date of Reading	Current Data: January Precip.	1948-62 Avg. Jan. Precip.	From Approx. 11/1 to Date: This Year	From Approx. 11/1 to Date: 1948-62 Average	From Approx. 11/1 to Date: % of Average
GILA RIVER							
Silver Creek Divide	9000	1/30	5.70	--	10.01	--	--
Hannagan Meadows	9030	1/28	4.21	3.30*	10.48	8.51*	123
SALT RIVER							
Hannagan Meadows	9030	1/28	4.21	3.30*	10.48	8.51*	123
Little Wildcat (Heber Snow Course)	7600	1/28	6.37	4.06*	11.93#	8.22*	145
Maverick Fork	9050	1/29	5.72	2.83*	11.68	6.87*	170
Workman Creek 1/	6970	1/28	7.51	4.62	12.64	10.70	118
VERDE RIVER							
Copper Basin Divide	6720	1/29	3.26	--	6.94	--	--
Fort Valley 1/	7350	1/29	2.46	2.45	5.86	5.30	111
Happy Jack 1/	7480	1/29	4.38	3.41*	10.63#	7.10*	150
Mingus Mountain	7660	1/29	3.00	2.99	6.77	5.89	115
Mormon Mountain	7500	1/27	5.40	--	12.86	--	--
LITTLE COLORADO							
Sheep Crossing (Baldy Snow Course)	9125	1/29	4.42	2.61*	9.93	6.23*	159
Little Wildcat (Heber Snow Course)	7600	1/28	6.37	4.06*	11.93	8.22*	145

1/ Data supplied by U. S. Forest Service.

* 1948-62 Adjusted Average

\# Partially Estimated

ARIZONA SOIL MOISTURE - ABOUT FEBRUARY 1, 1965

Drainage Basin and Station	1/ Station Number	Elev.	Soil Profile in Inches		Soil Moisture Content in Inches				
							Past Record		
			Depth	Cap.	Date	1965	1964	1963	Avg.
GILA RIVER									
Frisco Divide	8S1-M	8000	48	13.3	1/29	9.8	6.8	9.8	10.4
SALT RIVER									
Black River Divide	9S10-*	9100	48	16.8	1/29	17.8	15.3	15.2	14.8
Canyon Creek #2	10R7-M	7500	48	18.3	1/28	14.9	14.4	13.1	14.1
Corduroy Creek	10R8-*	6000	48	16.0	1/28	12.1	6.4	9.5	8.2
McNary	9R2-M	7200	48	16.3	1/28	15.5	13.3	14.0	14.2
VERDE RIVER									
Casner Park	11R2-M	6930	48	19.1	1/27	20.8	12.1	13.9	13.9
Mormon Mountain	11R3-M	7500	48	16.1	1/27	17.8	13.7	13.2	14.1

1/ * - Soil Moisture Station Only
M - Snow Course and Soil Moisture Station

LIST OF SNOW SURVEYORS

SNOW COURSE	SURVEYOR
Baldy	SCS and SRVWUA
Bear Wallow	Forest Service - Allan Hinds
Beaver Head	N. A. Josh
Bright Angel	National Park Service - Vern Ruesch
Camp Wood	Lyn Pehl
Canyon Creek #2	SCS and SRVWUA
Casner Park	SCS and SRVWUA
Chalender	Forest Service - Mel Richards
Copper Basin Divide	SCS - Bill Gray
Coronado Trail	Forest Service - Larry Soehlig
Forest Dale	Fort Apache Reservation - Raymond Endfield
Ft. Apache	SCS and SRVWUA
Fort Valley	Rocky Mountain Forest & Range Exp. Station
Frisco Divide	Forest Service - Joe Clayton
Gaddes Canyon	Paul G. Lidbeck
Gentry	SCS and SRVWUA
Grand Canyon	National Park Service - Larry Hackel
Hannagan Meadows	N. A. Josh
Happy Jack	Emil O. Ryberg
Heber	SCS and SRVWUA
Hummingbird	Ray Freeman
Ice King	James R. Wray
Inman	C. H. McCauley
Iron Springs	SCS - Bill Gray
Maverick Fork	SCS and SRVWUA
McNary	Fort Apache Reservation - Raymond Endfield
Milk Ranch	Fort Apache Reservation - Raymond Endfield
Mingus Mountain	Paul G. Lidbeck
Mogollon	James R. Wray
Mormon Lake	SCS and SRVWUA
Mormon Mountain	SCS and SRVWUA
Munds Park	SCS and SRVWUA
Newman Park	SCS and SRVWUA
Nutrioso	Forest Service - Larry Soehlig
Pacheta	Foch Phillips
Redstone Trail	James R. Wray
Rose Canyon	Forest Service - Allan Hinds
Silver Creek Divide	James R. Wray
Snow Bowl	Forest Service - Jay Shoemaker
State Line	Forest Service - Joe Clayton
White Spar	SCS - Bill Gray
Whitewater	Ray Freeman
Willow Ranch	Tiny Miller
Workman Creek	Rocky Mountain Forest & Range Exp. Station

The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

- Department of Agriculture
  - Soil Conservation Service
  - Forest Service
    - Apache Forest
    - Coconino Forest
    - Coronado Forest
    - Gila Forest
    - Kaibab Forest
    - Prescott Forest
    - Rocky Mountain Forest and Range Experiment Station
    - Tonto Forest
- Department of Commerce
  - Weather Bureau
    - Arizona Section
- Department of Interior
  - Bureau of Reclamation
    - Region III
  - Geological Survey
    - Arizona District
  - Bureau of Indian Affairs
    - Fort Apache Reservation
    - San Carlos Irrigation Project
  - National Park Service
    - Grand Canyon National Park
- Gila Water Commissioner
  - Safford, Arizona

STATE

- Arizona Agricultural Experiment Station

IRRIGATION PROJECTS

- Salt River Valley Water Users' Association
  - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
  - Coolidge, Arizona

PRIVATE

- Southwest Forest Industries, Inc.
  - McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation , navigation , mining and industry

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
ARIZONA

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE
SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF
FEB. 15, 1965

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Soil Conservation Service, 511 N.W. Broadway - Room 507, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan. 15 - Apr. 1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
ARIZONA

(Salt, Verde, Gila and Part of Lower Colorado River Basin)

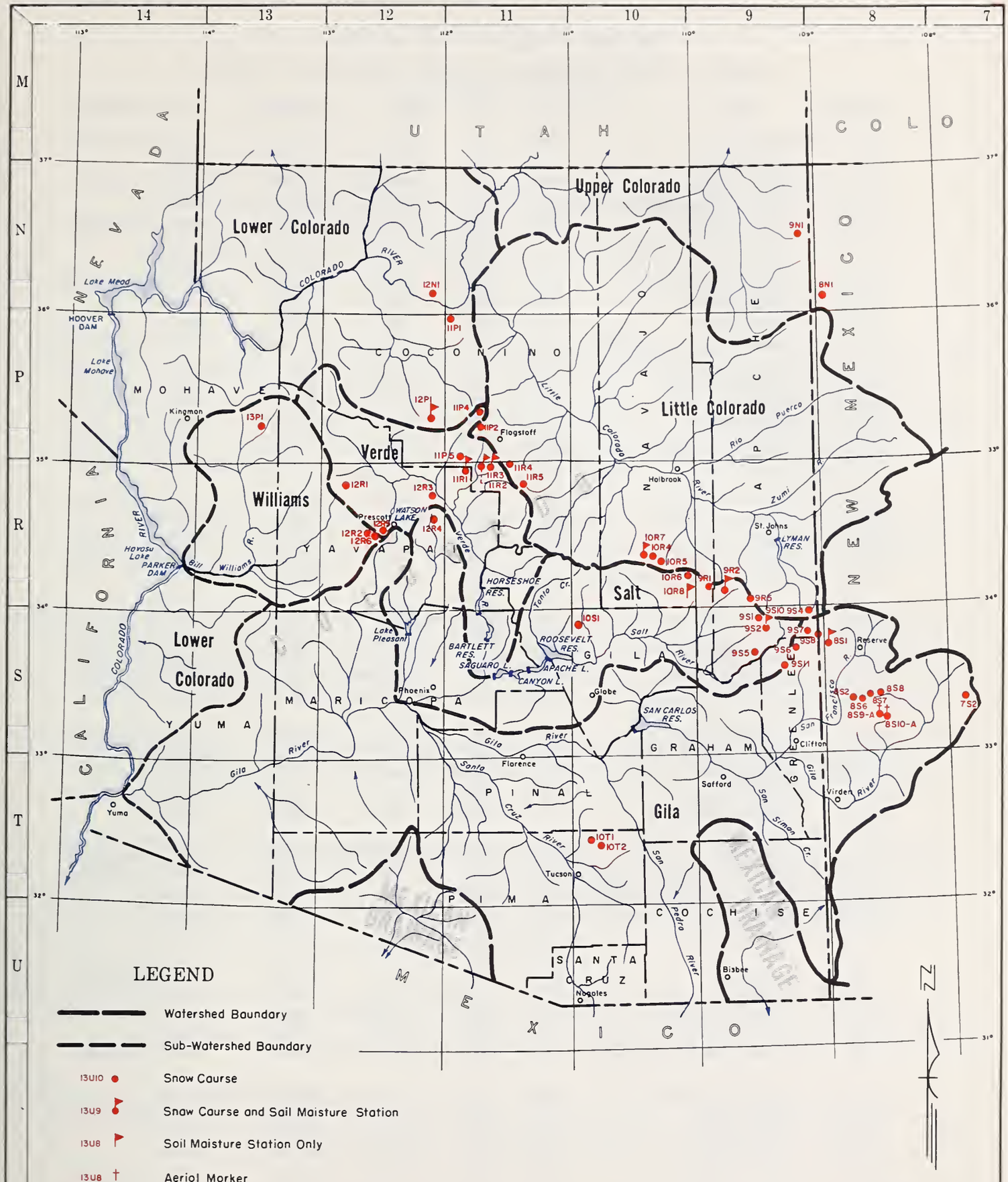
Report prepared by

RICHARD W. ENZ...SNOW SURVEY SUPERVISOR
SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

Issued by

ROBERT V. BOYLE
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

VICTOR I. CORBELL
PRESIDENT
SALT RIVER VALLEY WATER USERS ASSOCIATION



ARIZONA
COOPERATIVE SNOW SURVEYS
Snow Courses and Sub-Watersheds

INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

Number**	Name	Sec	Twp	Rge***	Elevation	River Basin
9S1	Baldy (p)	28	7N	27E	9125	Little Colorado
10T1	Bear Wallow	6	12S	16E	8100	Gila
9S6	Beaver Head	13	4N	30E	8000	San Francisco
9S10-*	Black River Divide	10	6N	27E	9400	Salt
12N1	Bright Angel	34	33N	3E	8400	Lower Colorado
12R1	Camp Wood	3	16N	6W	5700	Verde
10R7-M	Canyon Creek #2	18	11N	15E	7500	Little Colorado
11R2-M	Casner Park	19	18N	8E	6930	Verde
12P1-M	Chalender	27	22N	3E	7100	Verde
12R6	Copper Basin Divide(p)	23	13N	3W	6720	Verde
10R8 -*	Corduroy Creek	4	8N	21E	6000	Salt
9S7	Coronado Trail	26	5N	30E	8000	San Francisco
10R6	Forest Dale	2	9N	21E	6430	Salt
11P2	Fort Valley (p)	22	22N	6E	7350	Little Colorado
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado
8S1-M	Frisco Divide	31	6S	20W****	8000	San Francisco
12R4	Gaddes Canyon	11	15N	2E	7600	Verde
10R5	Gentry	36	11N	15E	7650	Salt
11P1	Grand Canyon	21	30N	4E	7500	Lower Colorado
9S11	Hannagan Meadows (p)	19	3N	29E	9090	Salt
11R5	Happy Jack	30	17N	9E	7630	Verde
10R4	Heber (p)	28	11N	15E	7600	Little Colorado
8S9-A	Hummingbird	19	11S	17E	10550	San Francisco
8S6	Ice King	6	11S	18W****	8020	San Francisco
7S2	Inman	6	11S	10W****	7800	Gila
12R2	Iron Springs	22	14N	3W	6200	Bill Williams
9S2	Maverick Fork (p)	13	6N	27E	9150	Salt
9R2-M	McNary	23	8N	23E	7200	Salt
9R1	Milk Ranch	33	8N	23E	7000	Salt
12R3	Mingus Mountain	3	15N	2E	7100	Verde
8S2	Mogollon	2	11S	19W****	7000	San Francisco
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado
11R3-M	Mormon Mountain (p)	14	18N	8E	7500	Verde
11R1-M	Munds Park	7	18N	7E	6500	Verde
11P5-M	Newman Park	25	19N	6E	6750	Verde
9S4	Nutrioso	23	6N	30E	8500	San Francisco
9S5	Pacheta	27	4-1/2N	27E	7800	Salt
8S7	Redstone Trail	5	11S	18W****	8600	San Francisco
10T2	Rose Canyon	15	12S	16E	7300	Gila
8S8	Silver Creek Divide	4	11S	18W****	9000	San Francisco
11P4	Snow Bowl (p)	36	23N	6E	10260	Verde
9S8	State Line	6	6S	21W****	8000	San Francisco
12R5	White Spar	19	13N	2W	6000	Verde
8S10-A	Whitewater	19	11S	17E	10750	Gila
13P1	Willow Ranch	16	21N	11W	5000	Bill Williams
10S1	Workman Creek	33	6N	14E	6900	Salt

* Soil Moisture Station only

** Number indicates location of snow course within coordinate rectangle, thus 9N1 is Course #1 in coordinate rectangle 9N.

*** All in Gila and Salt River Base and Meridian except where otherwise indicated.

**** New Mexico Principal Meridian

M Soil Moisture Station installed on or in vicinity of snow course.

(p) Storage gage installed on or in vicinity of snow course.

A Aerial Snow Depth Gage

ARIZONA WATER SUPPLY OUTLOOK

FEBRUARY 15, 1965

The Water Supply Outlook for most of Arizona is good. Reservoir Storage is generally above average, and runoff forecasts range from 80% of average on the Gila River to over twice average on the Little Colorado.

SNOW COVER: The storm of last week has greatly increased the snow pack on all major watersheds. Heaviest snowfall occurred in the McNary area where there is 24" of new snow containing 4" of water. Nearly this amount was also received in the Mormon Lake-Happy Jack area, and in the Mogollon Mountains in New Mexico. Snow Bowl #2 Snow Course, high on the San Francisco Peaks, now has a total of 81" with 36" of this being new snow.

The snow cover on the Verde Watershed jumped from below 50% of average on February 1, to near average. Snow on the other major watersheds is now 130% to 150% of average.

PRECIPITATION: The above normal precipitation pattern is continuing so far in February. The recent storm has already raised the February precipitation above the average for the month. Precipitation since November 1, is now 130-160% of average as measured in the storage gages on the watersheds.

RESERVOIR STORAGE: Storage in all Arizona reservoirs is now above average except for San Carlos Reservoir and Lake Pleasant; these should be above average by March 1.

Stored water in the Salt River Project reservoirs is 111% of the 1948-62 fifteen-year average, and 45% of capacity. Luna Reservoir, Nelson Reservoir, and the Greer Lakes are full, while Daggs Reservoir is filling fast. Watson Lake near Prescott is also expected to fill, and Lyman Reservoir should come close to filling this Spring.

SOIL MOISTURE: Good runoff may be expected from the present snow pack as soil moisture is very high. Soil moisture on the Gila Watershed improved greatly with the last storm, but is still not as good as on the other watersheds.

STREAMFLOW AND WATER SUPPLY: The Salt, Verde, and Tonto Rivers continue to flow much above average, producing 72,000 Acre Feet since February 1. The Gila River has been flowing near average so far this month.

Streamflow forecasts range from 80% of average on the Gila River to 226% on the Little Colorado River. The Salt River Project streams are predicted to flow 36% above average.

The Colorado River is forecast to flow 9,600,000 Acre Feet at the inflow to Lake Powell, during the April-July period. This is 125% of the 15-year average and twice what was received last year.

Water supplies will generally be adequate in Arizona this year, with some carry-over storage available for next year on some projects.

STREAM FLOW FORECASTS - FEBRUARY 15, 1965

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

SUB-WATERSHED, STREAM and STATION	SEASONAL STREAM FLOW IN THOUSANDS OF ACRE FEET FORECAST PERIOD: FEBRUARY - MAY, INCLUSIVE					
	Forecast Runoff 1965	Percent 15-Year Average	Measured Runoff 1964	1963	1962	1948-62 Average
Salt River at Intake	360	139	102.9	191.4	536.6	259.1
Tonto River above Roosevelt	55	166	10.7	8.7	52.2	33.2
Verde River above Horseshoe	190	126	102.7	43.8	229.6	151.1
Gila River near Gila	36	82	15.4	44.6	87.7	43.7
Gila River near Virden	41	80	14.8	55.6	117.2	51.0
Gila River near Solomon	80	82	25.3	104.3	229.3	98.0
Frisco River near Glenwood	17	81	---	11.7	54.2	20.9
Frisco River at Clifton	42	85	13.1	45.7	117.2	49.6
Little Colorado River above Lyman Dam (FEB.-JUNE, Incl.)	21	226	5.2	2.6	26.4	9.3
Gila River near Solomon (Month of March)	31	80	6.6	22.1	36.8	38.7

The Gila River at Head of Safford Valley is predicted to flow above 200 cfs until May 20.

Granite Creek is forecast to flow 1800 Acre Feet this spring, filling Watson Lake.

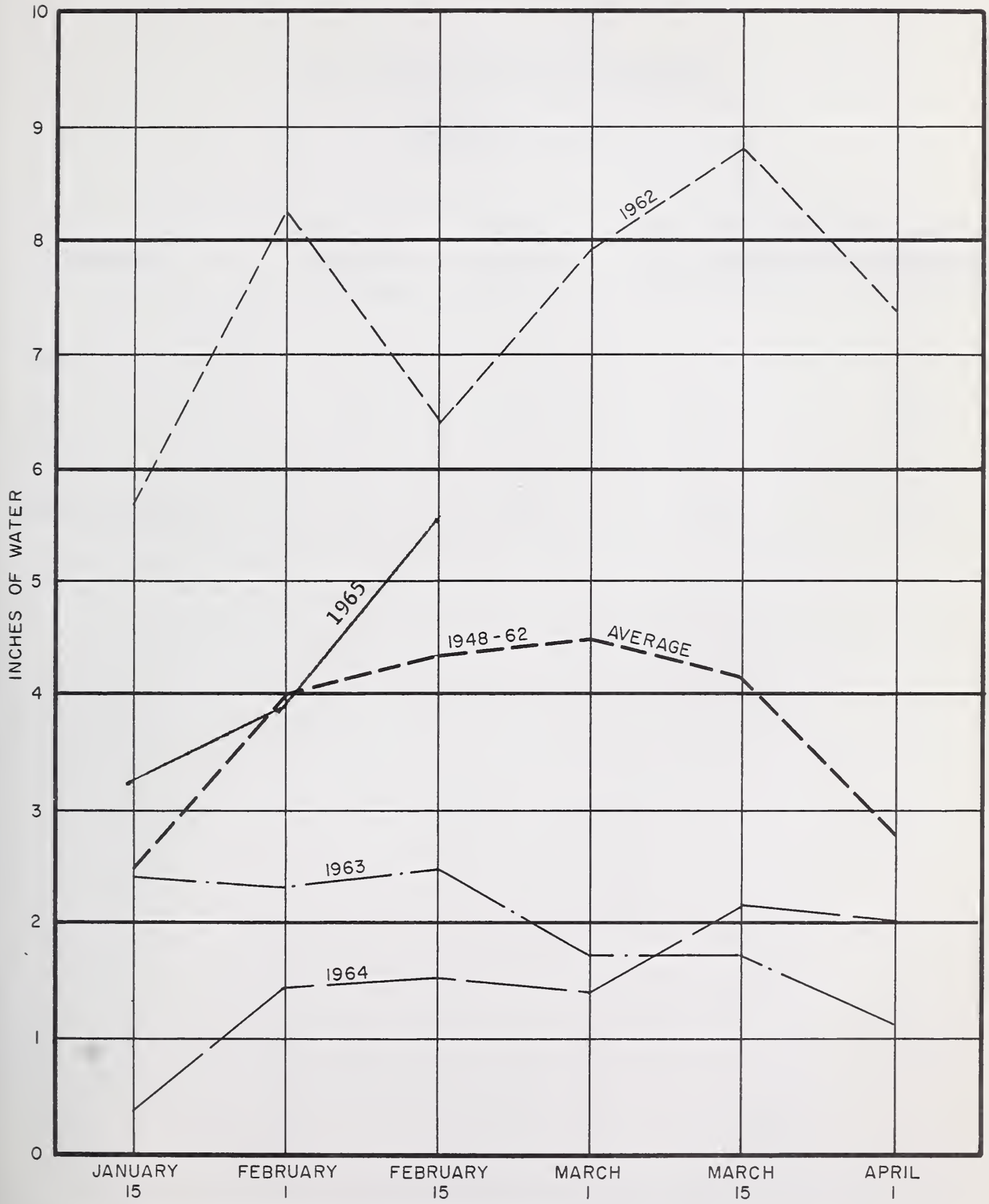
STATUS OF ARIZONA RESERVOIR STORAGE - ABOUT FEBRUARY 15, 1965

SUB-WATERSHED and/or STREAM	RESERVOIR	USABLE CAPACITY 1000s AC. FT.	USABLE STORAGE - 1000s ACRE FEET 1965	1964	1963	15-Year Average 1948-62
			GILA RIVER SUB-WATERSHED			
Agua Fria	Lake Pleasant	163.8	25.6	16.1	2.8	30.1
Granite	Watson Lake	4.7	3.0	3.9	0.7	---
Gila	San Carlos	1,206.0	67.8	66.1	112.1	70.5
Verde	Bartlett	179.5	116.7	14.3	18.1	75.1
Verde	Horseshoe	142.8	12.6	1.6	1.6	19.1
Salt	Roosevelt	1,382.0	429.5	436.0	694.6	420.1
Salt	Apache	245.0	234.6	235.0	225.1	200.3
Salt	Canyon	58.0	44.4	50.9	52.4	46.7
Salt	Saguaro	70.0	64.2	66.8	64.3	49.8
			LOWER COLORADO RIVER SUB-WATERSHED			
Colorado	Lake Havasu	619.4	539.1	529.6	534.8	544.8
Colorado	Lake Mohave	1,810.0	1,740.1	1,670.0	1,707.0	1,546.0*
Colorado	Lake Mead	27,207.0	11,299.0	15,298.0	22,587.0	17,213.8
Little Colo.	Lyman	30.6	10.2	10.2	13.4	7.1
Little Colo.	Show Low Lake	5.1	2.8	0.8	1.0	1.4*
			UPPER COLORADO RIVER SUB-WATERSHED			
Colorado	Lake Powell	28,040.0	6,195.2	3,107.0	---	---

* Average is for less than 15 years of record in the 1948-62 period.

RELATIVE SNOW WATER ACCUMULATION
ARIZONA

FEBRUARY 15, 1965



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

SNOW COVER ON ARIZONA WATERSHEDS

FEBRUARY 15, 1965

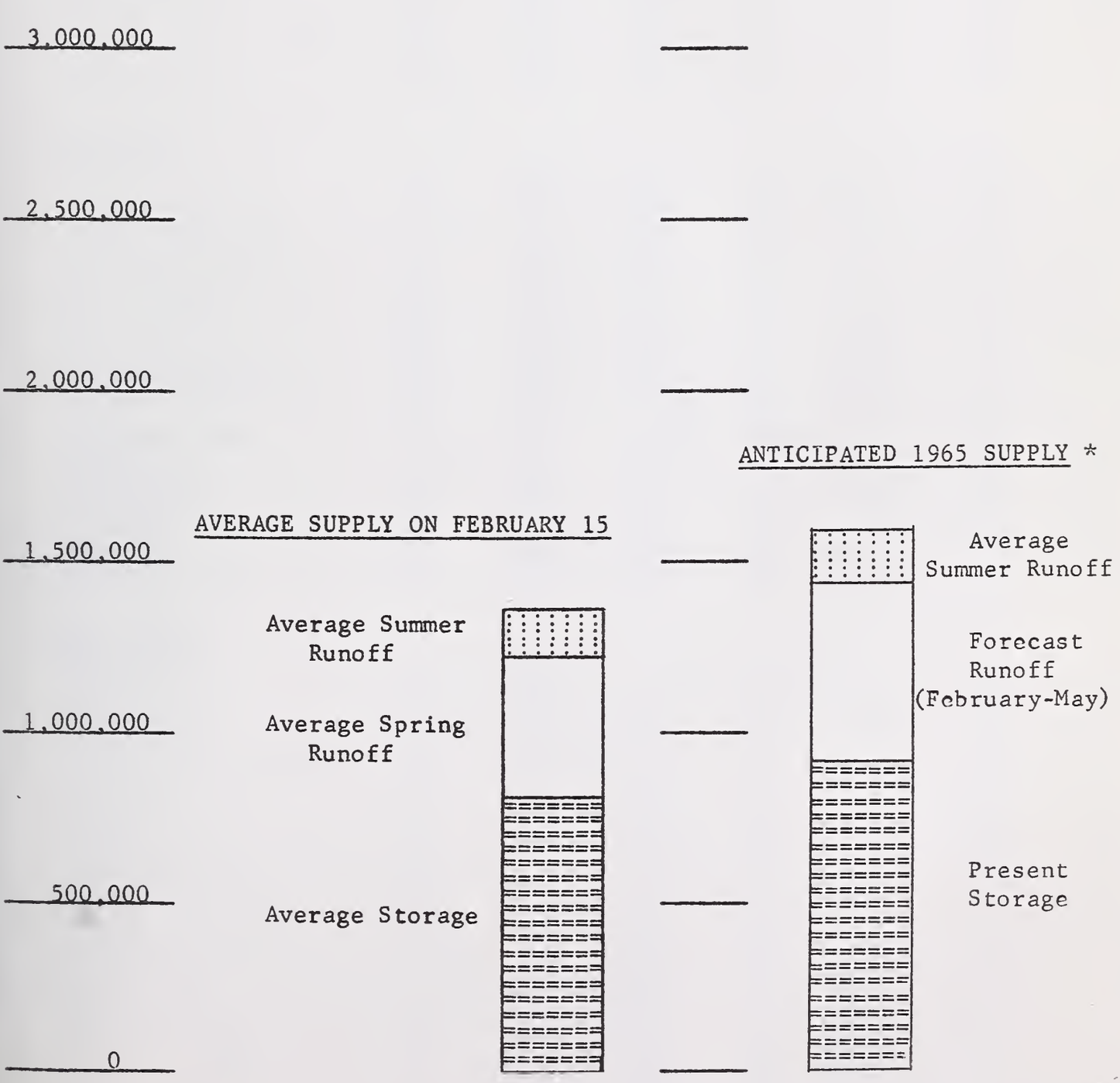
Watershed	No. of Courses Average	Water Content of Snow	This Year's Water Content of Snow Expressed as Percent of:	
			Last Year	Average *
Gila	8	3.7	528	130
Salt	14	5.5	324	138
Verde	11	3.4	652	99
Little Colorado	5	6.4	356	149

* Actual of Estimated 1948-62, 15-year Average.

WATER SUPPLY INVENTORY

SALT RIVER VALLEY SYSTEM

FEBRUARY 15, 1965



* Based on present Storage + Forecast Spring runoff + Average Summer runoff.

SNOW ABOUT FEBRUARY 15, 1965

DRAINAGE BASIN and SNOW COURSE NAME	NO.	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	AVERAGE [a]	
GILA RIVER								
Bear Wallow	10T1	8100	2/14	17	4.6	0.6	3.2	
Beaver Head	9S6	8000	2/12	17	3.1	0.8	3.0	
Coronado Trail	9S7	8000	2/12	21	5.4	0.4	2.7	
Frisco Divide	8S1-M	8000	2/15	14	3.5	0.7	2.1	
Hummingbird #2 (A)	8S9-A	10550	2/12	65	13.7	---	---	
Ice King	8S6	8020	2/12	30	6.8	2.1	---	
Inman	7S2	7800	2/12	9	2.1	0.0	0.5	
Mogollon	8S2	7000	2/12	14	1.6	0.0	2.0	**
Nutrioso	9S4	8500	2/12	16	3.8	0.7	2.0	
Redstone Trail	8S7	8600	2/12	33	7.1	2.7	---	
Rose Canyon	10T2	7300	2/14	17	3.6	0.3	1.9	
Silver Creek Divide	8S8	9000	2/12	52	11.7	3.8	---	
State Line	9S8	8000	2/15	15	3.3	0.3	2.3	
Whitewater (A)	8S10-A	10750	2/12	71	14.2	6.8	---	
SALT RIVER								
Baldy *	9S1	9125	2/10	46	11.1	2.1	7.7	**
Beaver Head	9S6	8000	2/12	17	3.1	0.8	3.0	
Canyon Creek #2	10R7-M	7500	2/13	20	3.8	1.6	3.1	**
Coronado Trail	9S7	8000	2/12	21	5.4	0.4	2.7	
Forest Dale	10R6	6430	2/12	14	2.3	1.8	1.3	
Ft. Apache *	9R5	9160	2/10	50	10.8	2.6	8.1	**
Gentry	10R5	7600	2/13	17	3.2	1.9	3.3	**
Hannagan Meadows	9S11	9090	2/12	49	12.8	3.1	---	
Heber	10R4	7600	2/13	20	4.2	1.4	3.6	**
Maverick Fork	9S2	9050	No Survey			2.6	9.?	**
McNary	9R2-M	7200	2/12	24	4.0	1.8	2.4	
Milk Ranch	9R1	7000	2/12	21	3.3	0.9	1.7	
Nutrioso *	9S4	8500	2/12	16	3.8	0.7	2.0	
Pacheta	9S5	7800	2/15	18	4.1	1.8	3.4	**
Workman Creek	10S1	6900	2/11	30	6.1	3.2	4.6	**
VERDE RIVER								
Camp Wood	12R1	5700	Report Delayed			0.0	0.9	
Casner Park	11R2-M	6930	2/14	17	3.7	0.7	4.1	**
Chalender	12P1-M	7100	2/10	22	3.7	1.4	3.4	
Copper Basin Divide	12R6	6720	2/12	13	2.3	0.0	---	
Fort Valley	11P2	7350	2/12	14	3.2	0.0	2.7	
Gaddes Canyon	12R4	7600	2/12	30	7.0	0.4	5.0	**
Happy Jack	11R5	7630	2/13	23	5.9	0.0	4.1	**
Iron Springs *	12R2	6200	2/12	5	1.1	0.0	1.3	
Mingus Mountain	12R3	7100	2/12	12	2.3	0.0	1.3	
Mormon Lake *	11R4	7350	2/14	18	4.2	1.7	4.8	
Mormon Mountain	11R3-M	7500	2/14	23	5.4	1.4	6.5	**
Munds Park	11R1-M	6500	2/13	15	2.7	0.0	2.3	**
Newman Park	11P5-M	6750	2/13	16	2.8	0.1	---	
Snow Bowl #1	11P4	10260	2/11	50	11.2	---	---	
Snow Bowl #2	11P6	11000	2/11	81	21.8	---	---	
White Spar	12R5	6000	2/12	8	1.5	0.0	---	

(a) 1948-62, 15 year period. (*) Adjacent drainage. (**) 1948-62 Adjusted Average. (A) Aerial observation: Water content estimated.

SNOW ABOUT FEBRUARY 15, 1965

DRAINAGE BASIN and SNOW COURSE			CURRENT INFORMATION			PAST RECORD		
NAME	NO.	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) AVERAGE [a]	
BILL WILLIAMS RIVER								
Camp Wood *	12R1	5700	Report Delayed			0.0	0.9	
Copper Basin Divide	12R6	6720	2/12	13	2.3	0.0	---	
Iron Springs	12R2	6200	2/12	5	1.1	0.0	1.3	
Willow Ranch	13P1	5000	2/14	0	0.0	0.0	0.4	
LOWER COLORADO RIVER								
Bright Angel	12N1	8400	2/10	41	6.3	---	7.8	**
Chalender *	12P1-M	7100	2/10	22	3.7	1.4	3.4	
Fort Valley	11P2	7350	2/12	14	3.2	0.0	2.7	
Grand Canyon	11P1	7500	2/10	14	1.6	0.0	2.5	
LITTLE COLORADO RIVER								
Baldy	9S1	9125	2/10	46	11.1	2.1	7.7	**
Canyon Creek #2	10R7-M	7500	2/13	20	3.8	1.6	3.1	**
Forest Dale	10R6	6430	2/12	14	2.3	1.8	1.3	
Ft. Apache	9R5	9160	2/10	50	10.8	2.6	8.1	**
Fort Valley	11P2	7350	2/12	14	3.2	0.0	2.7	
Gentry	10R5	7600	2/13	17	3.2	1.9	3.3	**
Happy Jack *	11R5	7630	2/13	23	5.9	0.0	4.1	**
Heber	10R4	7600	2/13	20	4.2	1.4	3.6	**
McNary	9R2-M	7200	2/12	24	4.0	1.8	2.4	
Mormon Lake	11R4	7350	2/14	18	4.2	1.7	4.8	
Mormon Mountain	11R3-M	7500	2/14	23	5.4	1.4	6.5	**
Nutrioso	9S4	8500	2/12	16	3.8	0.7	2.0	
Snow Bowl #1	11P4	10260	2/11	50	11.2	---	---	
Snow Bowl #2	11P6	11000	2/11	81	21.8	---	---	

(a) 1948-62, 15 year period. (*) Adjacent drainage. (**) 1948-62 Adjusted Average. (A) Aerial observation: Water content estimated.

PRECIPITATION AT SELECTED ARIZONA STATIONS [1/]

STATION	Precipitation (Inches)			
	January - 1965		Current Water-Year (Oct.1964 - Jan.1965)	
	Total	Departure from Average	Total	Departure from Average
Alpine	2.41	+ .81	6.16	+ .76
Ash Fork	1.78	+ .76	2.89	- .73
Clifton	1.50	+ .59	3.45	+ .08
Douglas Smelter	1.02	+ .30	1.52	- .97
Flagstaff WBAS *	3.05	+ 1.22	7.08	+ 1.08
Payson Ranger Station	3.90	+ 1.78	7.54	+ .67
Phoenix WBAS	1.22	+ .49	2.83	+ .30
Prescott **	2.49	+ .51	5.06	- .99
Springerville	.70	- .01	2.97	+ .53
Tucson WBAS	.45	- .37	2.85	- .15
Winslow WBAS	1.42	+ .99	2.16	+ .19
Yuma WBAS	.56	+ .17	1.11	+ .20

* WBAS = Weather Bureau Airport Station

[1/] Data and Analysis furnished by Paul C. Kangieser, Arizona State Climatologist, U. S. Weather Bureau, Phoenix, Arizona.

** Data from Prescott City will be used instead of WBAS Data beginning with this issue.

PRECIPITATION

STORAGE GAGE DATA - ABOUT FEBRUARY 15, 1965

Drainage Basin and Storage Gage	Elev.	Current Data Date of Reading	Feb.1-15 Precip.	1948-1962 Av.Precip. Feb. 1-15	From Approx. 11/1 to Date This Year	1948-62 Average	% of Average
GILA RIVER							
Silver Creek Divide	9000	2/12	3.80	--	13.81	--	--
Hannagan Meadows	9030	Not Read		1.01*	--	9.52*	--
SALT RIVER							
Hannagan Meadows	9030	Not Read		1.01*	--	9.52*	--
Little Wildcat (Heber Snow Course)	7600	2/13	2.60	1.38*	14.53	9.60*	151
Maverick Fork	9050	Not Read		1.17*	--	8.04*	--
Workman Creek 1/	6970	2/11	3.65	1.42	16.29	12.12	134
VERDE RIVER							
Copper Basin Divide	6720	2/12	2.95	--	9.89	--	--
Fort Valley 1/	7350	2/12	2.09	.93	7.95	6.23	128
Happy Jack 1/	7480	2/13	2.60	1.03*	13.23#	8.13*	163
Mingus Mountain	7660	2/12	2.90	1.06	9.67	6.95	139
Mormon Mountain	7500	2/14	3.35	--	16.21	--	--
LITTLE COLORADO							
Sheep Crossing (Baldy Snow Course)	9125	2/10	2.18	1.06*	12.11	7.29*	166
Little Wildcat (Heber Snow Course)	7600	2/13	2.60	1.38*	14.53	9.60*	151

1/ Data supplied by U. S. Forest Service.
* 1948-62 Adjusted Average
\# Partially Estimated

ARIZONA SOIL MOISTURE - ABOUT FEBRUARY 15, 1965

Drainage Basin and Station	1/ Station Number	Elev.	Soil Profile in Inches Depth	Cap.	Soil Moisture Content in Inches Date	1965	Past Record 1964	1963	Avg.
GILA RIVER									
Frisco Divide	8S1-M	8000	48	13.3	1/15	10.9	7.3	10.6	11.2
SALT RIVER									
Black River Divide	9S10-*	9100	48	16.8	1/12	17.8	15.5	15.9	14.7
Canyon Creek #2	10R7-M	7500	48	18.3	1/13	14.7	14.3	13.6	14.3
Corduroy Creek	10R8-*	6000	48	16.0	1/12	12.0	6.4	9.0	8.5
McNary	9R2-M	7200	48	16.3	1/12	17.0	13.3	15.1	13.5
VERDE RIVER									
Casner Park	11R2-M	6930	48	19.1	1/14	20.4	11.7	17.5	14.5
Mormon Mountain	11R3-M	7500	48	16.1	1/14	16.7	13.5	17.7	14.7

1/ * - Soil Moisture Station only.
M - Snow Course and Soil Moisture Station

LIST OF SNOW SURVEYORS

SNOW COURSE	SURVEYOR
Baldy	SCS and SRVWUA
Bear Wallow	Forest Service - Allan Hinds
Beaver Head	N. A. Josh
Bright Angel	National Park Service - Vern Ruesch
Camp Wood	Lyn Pehl
Canyon Creek #2	SCS and SRVWUA
Casner Park	SCS and SRVWUA
Chalender	Forest Service - Mel Richards
Copper Basin Divide	SCS - Bill Gray
Coronado Trail	Forest Service - Larry Soehlig
Forest Dale	Fort Apache Reservation - Raymond Endfield
Ft. Apache	SCS and SRVWUA
Fort Valley	Rocky Mountain Forest & Range Exp. Station
Frisco Divide	Forest Service - Joe Clayton
Gaddes Canyon	Paul G. Lidbeck
Gentry	SCS and SRVWUA
Grand Canyon	National Park Service - Larry Hackel
Hannagan Meadows	N. A. Josh
Happy Jack	Emil O. Ryberg
Heber	SCS and SRVWUA
Hummingbird	Ray Freeman
Ice King	James R. Wray
Inman	C. H. McCauley
Iron Springs	SCS - Bill Gray
Maverick Fork	SCS and SRVWUA
McNary	Fort Apache Reservation - Raymond Endfield
Milk Ranch	Fort Apache Reservation - Raymond Endfield
Mingus Mountain	Paul G. Lidbeck
Mogollon	James R. Wray
Mormon Lake	SCS and SRVWUA
Mormon Mountain	SCS and SRVWUA
Munds Park	SCS and SRVWUA
Newman Park	SCS and SRVWUA
Nutrioso	Forest Service - Larry Soehlig
Pacheta	Foch Phillips
Redstone Trail	James R. Wray
Rose Canyon	Forest Service - Allan Hinds
Silver Creek Divide	James R. Wray
Snow Bowl	Forest Service - Jay Shoemaker
State Line	Forest Service - Joe Clayton
White Spar	SCS - Bill Gray
Whitewater	Ray Freeman
Willow Ranch	Tiny Miller
Workman Creek	Rocky Mountain Forest & Range Exp. Station

The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

- Department of Agriculture
  - Soil Conservation Service
  - Forest Service
    - Apache Forest
    - Coconino Forest
    - Coronado Forest
    - Gila Forest
    - Kaibab Forest
    - Prescott Forest
    - Rocky Mountain Forest and Range Experiment Station
    - Tonto Forest
- Department of Commerce
  - Weather Bureau
    - Arizona Section
- Department of Interior
  - Bureau of Reclamation
    - Region III
  - Geological Survey
    - Arizona District
  - Bureau of Indian Affairs
    - Fort Apache Reservation
    - San Carlos Irrigation Project
  - National Park Service
    - Grand Canyon National Park
- Gila Water Commissioner
  - Safford, Arizona

STATE

- Arizona Agricultural Experiment Station

IRRIGATION PROJECTS

- Salt River Valley Water Users' Association
  - Phoenix, Arizona
- San Carlos Irrigation and Drainage District
  - Coolidge, Arizona

PRIVATE

- Southwest Forest Industries, Inc.
  - McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation , navigation , mining and industry

"The Conservation of Water begins with the Snow Survey"